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Engineer Research and
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Upper Guadalupe River Flood Control Weir Study

Description

A physical model investigation was conducted to evaluate a proposed flood control weir design and modify to provide target flow distributions between the natural channel and a bypass channel in the Upper Guadalupe project area of San Jose, Santa Clara County, California.

Issue

The Upper Guadalupe project area is in the city of San Jose, Santa Clara County, California. The river reach proposed for improvement begins at Interstate Highway 280 and extends south for about 5.5 miles. The final Feasibility Study and Environmental Impact Statement submitted by the south Pacific Division recommended a project that provides a 50-year level of flood protection. The locally preferred plan (requiring additional funding from the Santa Clara Valley Water District) would provide a 100-year level of flood protection. The project was authorized in the 1999 Water Resources Development Act at a total cost of \$140,328,000 with an estimated Federal cost of \$44,000,000 and an estimated non-Federal cost of \$96,328,000.



**Physical model of Upper Guadalupe, San
Jose, CA**

Products

At the request of the U.S. Army Engineer District, San Francisco, a 1:30 scale physical model was designed and constructed at the U.S. Army Engineer Research and Development Center by the Coastal and Hydraulics Laboratory. The model reproduces a portion of the Guadalupe River and the proposed control weir and a portion of the bypass channel. The model was used to evaluate and modify the control weir to achieve proper flow distribution in the two channels. It was also used to document, qualitatively, sediment deposition locations in the channels. Two channel roughnesses were modeled and evaluated to bound prototype channel condition during flood events.

Benefits

Model results will provide design guidance for the proposed control weir.

Sponsors

U.S. Army Engineer District, San Francisco.

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